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TRANSMITTAL FORM

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Application No.	10/712,472
Filing Date	November 12, 2004
First Named Inventor	Axel Herbst
Art Unit	2167
Examiner Name	Rayyan, Susan F.
Total Number of Pages in This Submission	22
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ENCLOSURES *(check all that apply)*

- [x] Fee Transmittal Form
  - [ ] Fee Attached
- [ ] Amendment / Reply
  - [ ] After Final
  - [ ] Affidavits/declaration(s)
- [ ] Extension of Time Request
- [ ] Express Abandonment Request
- [ ] Information Disclosure Statement
  - [ ] PTO/SB/08
- [ ] Certified Copy of Priority Document(s)
- [ ] Response to Missing Parts/ Incomplete Application
  - [ ] Basic Filing Fee
  - [ ] Declaration/POA
- [ ] Response to Missing Parts under 37 CFR 1.52 or 1.53
- [ ] Drawing(s)
- [ ] Licensing-related Papers
- [ ] Petition
- [ ] Petition to Convert a Provisional Application
- [ ] Power of Attorney, Revocation Change of Correspondence Address
- [ ] Terminal Disclaimer
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- [ ] CD, Number of CD(s)
  - [ ] Landscape Table on CD
- [ ] After Allowance Communication to TC
- [ ] Appeal Communication to Board of Appeals and Interferences
- [x] Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
- [ ] Proprietary Information
- [ ] Status Letter
- [x] Other Enclosure(s) *(please identify below):*

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Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Robert B. O'Rourke, Reg. No. 46,972 BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
Signature	
Date	5/13/08

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FEE TRANSMITTAL for FY 2007

Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27.

TOTAL AMOUNT OF PAYMENT	($)	510.00

Complete if Known	
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METHOD OF PAYMENT *(check all that apply)*

☐ Check ☐ Credit card ☐ Money Order ☐ None ☐ Other (please identify): _____

☒ Deposit Account Deposit Account Number: 02-2666 Deposit Account Name: Blakely, Sokoloff, Taylor & Zafman LLP

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

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☒ Credit any overpayments
☒ Any concurrent or future reply that requires a petition for extension of time should be treated as incorporating an appropriate petition for extension of time and all required fees should be charged.

FEE CALCULATION

1. EXTRA CLAIM FEES

			Extra Claims		Fee from below	=	Fee Paid
Total Claims	25	- 39* =	0	x	50.00	=	$0.00
Independent Claims	2	- 5* =	0	x	210.00	=	$0.00
Multiple Dependent						=	

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	50	2202	25	Claims in excess of 20
1201	210	2201	105	Independent claims in excess of 3
1203	370	2203	185	Multiple Dependent claim, if not paid
1204	810	2204	405	**Reissue independent claims over original patent
1205	810	2205	405	**Reissue claims in excess of 20 and over original patent

SUBTOTAL (1) ($) 0.00

***or number previously paid, if greater, For Reissues, see below*

2. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet.	
2053	130	2053	130	Non-English specification	
1251	120	2251	60	Extension for reply within first month	
1252	460	2252	230	Extension for reply within second month	
1253	1,050	2253	525	Extension for reply within third month	
1254	1,640	2254	820	Extension for reply within fourth month	
1255	2,230	2255	1,115	Extension for reply within fifth month	
1401	510	2401	255	Notice of Appeal	
1402	510	2402	255	Filing a brief in support of an appeal	510.00
1403	1,030	2403	515	Request for oral hearing	
1451	1,510	2451	1,510	Petition to institute a public use proceeding	
1460	130	2460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
1809	810	1809	405	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	810	2810	405	For each additional invention to be examined (37 CFR § 1.129(b))	
Other fee (specify)					

SUBTOTAL (2) ($) 510.00

SUBMITTED BY *Complete (if applicable)*

Name (Print/Type)	Robert B. O'Rourke	Registration No. (Attorney/Agent)	46,972	Telephone	(408) 720-8300
Signature				Date	5/13/08

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In Re Application of:	)	
	)	
Herbst et. al.	)	Examiner: Rayyan, Susan F.
	)	
Application No: 10/712,472	)	Art Unit: 2167
	)	
Filed: November 12, 2003	)	Confirmation No.: 9414
	)	
For: Efficient Deletion of Archived Data	)	
	)	

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APPEAL BRIEF UNDER 37 C.F.R. § 41.37(a)

This is an appeal to the Board of Patent Appeals and Interferences from the decision of the examiner of Group 2167, dated December 13, 2007, which finally rejected claims 40-64 in the above-identified application. Appellants (hereinafter "Appellants") submit this appeal brief pursuant to 37 C.F.R. § 41.37(a.) Enclosed is a check in the amount of $500.00 to cover the fee for filing a brief in support of an appeal as required under 37 C.F.R. 1.17(c) and 40.20(b)(2.) Authorization is herby given to charge our Deposit Account No. 02-2666 for any charges that may be due. Furthermore, if an extension is required, then Appellants hereby request such extension.

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I. REAL PARTY IN INTEREST

Herbst, et. al., the parties named in the caption, assigned their rights to the subject application through an assignment recorded on November 12, 2003 at real 014706 and frame 0831 to SAP Aktiengesellschaft ("SAP"), Nuerottstrasse 16, Waldorf, Fed. Rep. Germany D-69190. Accordingly, SAP is the real party in interest.

II. RELATED APPEALS AND INTERFERENCES

To the best of Appellant's knowledge, there are no appeals or interferences related to the present appeal that will directly affect, be directly affected by, or have a bearing on the Board's decision in the instant appeal.

III. STATUS OF CLAIMS

Claims 40-64 are pending in the application and were finally rejected in an Office Action mailed on December 13, 2007. Claims 40-64 are the subject of this appeal. A copy of claims 40-64 as they stand on appeal are set forth in Appendix A.

IV. STATUS OF AMENDMENTS

Claims 40-55 were added after the Office Action mailed June 28, 2006. Claims 48 and 50 were amended and claims 56-64 were added after the Office Action mailed June 22, 2007.

V. SUMMARY OF CLAIMED SUBJECT MATTER

A. The Applicant's Specification

The disclosure of the present application discloses the following method with respect to archived data objects. The reader is referred to Fig. 1 of the present application which is presented immediately below.

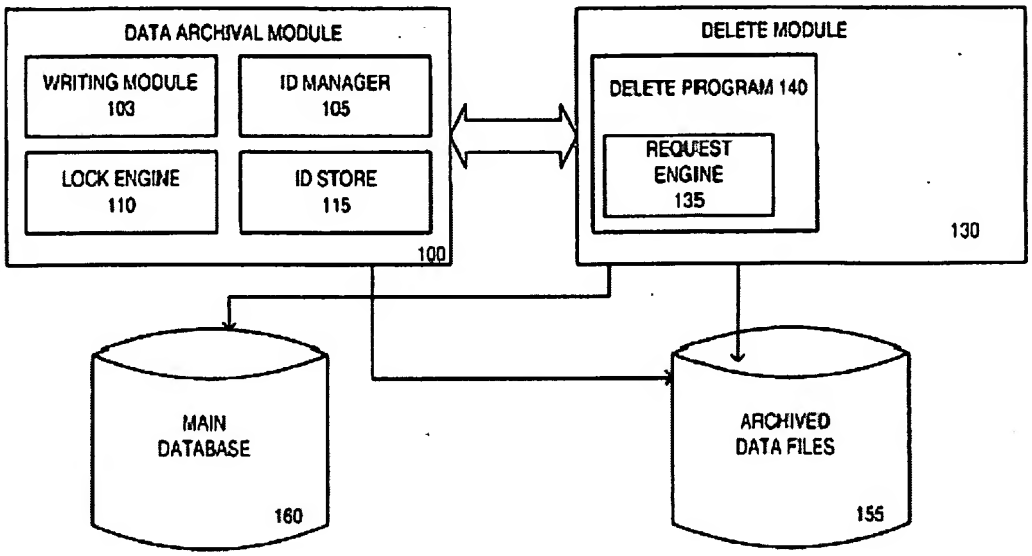

FIG. 1

1. Writing module 103 selects objects stored in main database 160 for archival in archival storage 155. See, Applicant's specification, para. [0017] ("The writing module 103 selects data objects . . . to be archived.").

2. The ID manager 105 assigns IDs to the selected objects and the objects are written into the archival storage 155. The IDs of the objects are marked for deletion. See, Applicant's specification, para. [0017] ("[T]he writing module 103 notifies the ID manager 105 of the data objects to be deleted from the main database 160. Upon receiving the notification, the ID manager 105 assigns IDs to the data objects to be deleted. . . . Once the data objects are successfully written into the archived data files 155 . . . the ID manager . . . marks the IDs of the data objects as available for deletion.").

3. The delete module 130 requests the IDs of objects marked for deletion from the ID manager 105 (e.g., through PICK requests). See, Applicant's specification, para. [0019].

4. The ID manager 105 locks the IDs of the objects and provides the IDs of the objects to the delete module 130. The locking of the IDs of the objects signifies that the objects themselves are now subject to deletion from the main database 160. See, Applicant's specification, para. [0021] ("[U]pon the selection of IDs of data objects to be deleted, the lock engine 110 locks the IDs and/or the data objects . . . . Locked IDs indicate that the data objects corresponding to the IDs are being currently deleted by other delete jobs and these locked IDs are not selected for deletion in response to subsequent PICK requests.").

5. The delete module 130, in order to confirm that the content of the objects have been properly recorded in the archival storage 155, confirms the content of the objects in the main database 160 corresponds to the content of the objects that were archived in archival storage 155 (e.g., by comparing the two). Upon the confirmation that the content has been properly archived, the objects stored in the main database 160 are finally deleted. The identifiers are also deleted. See, Applicant's specification, para. [0023] ("Once the delete program 140 obtains the content of the data objects to be deleted, the delete program 140 deletes the data objects from the main database 160 . . . upon confirming that the content to be deleted corresponds to the content of the data objects written in the archived data files 155. . . . [T]he data archival module 100 deletes the identification keys associated with the deleted objects.").

B. The Independent Claims of the Applicant's Specification

Independent claims 40 and 55 substantially recite (emphasis added):

a) assigning an identifier for a data object and storing said identifier, said data object stored in a database (2);

b) providing said identifier in response to a request requesting one or more identifiers of one or more data objects to be deleted (3), locking said identifier (4), and confirming that content of an archived version of said data object corresponds to said data object's content (5); and,

c) deleting said data object from said database and deleting said identifier (5).

Independent claim 50 substantially recites (emphasis added):

> a first module comprising first program code that when processed by said machine perform a first method, comprising:
>
> assigning an identifier for a data object and storing said identifier, said data object stored in a database (2);
>
> providing said identifier in response to a request made by a second module requesting one or more identifiers of one or more data objects to be deleted (3), locking said identifier (4);
>
> a second module comprising second program code that when processed by said machine performs a second method, comprising:
>
> confirming that content of an archived version of said data object corresponds to said data object's content (5);
>
> deleting said data object (5);
>
> wherein said first method also includes deleting said identifier after said confirming.

Note that certain claim elements above are followed by a parenthetical that includes a number corresponding to a sequence in the process outlined in the preceding section. The Applicant believes the claimed subject matter is clear in view of the process described in the preceding section.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The issues involved in this appeal are whether independent claims 40, 50 and 55 are obvious under 35 U.S.C. § 103(a) in view of U.S. Pat. No. 5,548,750 ("Larsson") in view of U.S. Pub. App. No. 2003/0004975 ("Nakano"). According to the Examiner, Larsson teaches all claim limitations except the deletion of the identifier. For example, the Examiner's Final Office Action states:

> As per claim 40 Larsson teaches:
>
> a) assigning an identifier for a data object and storing said identifier, said data object stored in a database (Figure 1, elements A' and C', column 6, lines 45-47, as backup marked in the LID table and column 4, lines 42-45, as A' and C' stored in the database area);
>
> b) providing said identifier in response to a request requesting one or more identifiers of one or more data objects to be deleted, locking said identifier, and

> confirming that content of an archived version of said data object corresponds to said data object's content (Figure 6, column 6, lines 45-47, as backup marked in the LID table of the local dam base and column 8, lines 7-11 as if it equal [sic] to "include" the object will be copied to the backup area, if it s equal to "exclude" the object will be copied but the value of the variable is set to "Include" as preparation or the next backup);
>
> c) deleting said data object from said database (Figure 6, element Throw out object).
>
> Larsson does not explicitly teach deleting said identifier.
>
> See, Examiner's Final Office Action, p. 2-3.

Moreover, according to the Examiner, Larsson discloses: i) the locking of an identifier; and, ii) confirming that an archived version of a data object corresponds to the actively stored version of a data object. The Examiner stated:

> Applicant argues Larsson does not teach locking said identifier, and confirming that content of an archived version of said data object corresponds to said data object's content. Examiner find Larsson teaches this at Figure 6, column 6, lines 45-47, as backup marked in the LID table of the local dam base and column 8, lines 7-11 as if it equal to "include" the object will be copied to the backup area, if it is equal to "exclude" the object will be copied but the value of the variable is set to "Include" as preparation or the next backup.
>
> See, Examiner's Final Office Action, p. 9.

VII. ARGUMENT

A. Overview of the Prior Art (*The Larsson and Nakano References*)

The Larsson reference discloses a data backup process for a multiple transaction system. As the Applicant understands the Larsson reference, the disclosure of the Larsson reference teaches the following features:

1. A "database" portion of memory and a "backup" portion of memory. During a data backup process, data objects stored in the database memory portion are copied over to the backup portion of memory. See, Larsson, Fig. 1 and col. 4, lines 27-32.

2. When a backup process is started, a "new" transaction table is created and an "old" transaction table is created. The "new" table lists all pending transactions that are not yet in the COMMIT phase and the "old" transaction table lists all pending transactions that are either in the COMMIT phase or have COMMITTED. In operation, each time a backup process is started transactions are associated with the proper table ("new" or "old"). The general idea is that data objects associated with transactions that are COMMITTING or have COMMITTED (listed in the "old" table) can be copied over from the live database memory to the backup memory (i.e., backed up), while, transactions that have not yet reached the COMMIT phase (listed in the "new" table) should not be copied over into backup memory (i.e., not backed up). See, Larsson, abstract (last two sentences); col. 5, lines 10-14, lines 38-41; col. 6, lines 5-11.

3. A "BackupSynch" variable is assigned for each of the data objects for the transactions and is labeled as either "include [in the backup process]" or "exclude [from the backup process]". The BackupSynch variables are stored in a Rec DB-Catalogue for a specific processor. The Larsson reference does not appear to disclose in detail the algorithm that determines whether an object is labeled as "include" or "exclude", but, as far as the Applicant can tell, consistent with point 2 above, data objects associated with transactions listed in the "old" table are labeled "include" and data objects associated with transactions listed in the "new" table are labeled "exclude". See, Larsson, col. 5, lines 42-43, 54-57; col. 8, lines 4-11.

4. As the Applicant understands Larsson, the backup process does not start until those transactions that are in a COMMIT phase but have not finally COMMITTED. "Exclude" and "include" labels for objects associated with these transactions are also reflected in a LID table. See, Larsson, col. 6, lines 12-51.

5. When the backup process starts, the data objects are copied over into backup memory (or not copied over) based on the include/exclude information contained in the BackupSynch variables and the LID table consistent with the algorithms specified in Figures 12-14. See, Larsson, col. 7, lines 44-53.

Importantly, the contents of the Rec DB-Catalogue or LID table appear to be the only data structures discussed in the Larsson reference that may include an identifier for a data object, and, nowhere does Larsson discuss or suggest the **locking** of any such identifier. Moreover, Larsson does not appear to disclose or suggest confirming that archived data corresponds to the original data.

The Nakano reference does not appear to cure the deficiencies of Larsson. Nakano discloses locking of data. See, e.g., Nakano paras. [0069] - [0073], [0122], [0180]. However, Nakano fails to disclose or suggest the locking of an identifier for a data object (locked or otherwise) or a confirmation step that confirms archived data correspond to original data or the confirmation that archived data corresponds to the original data.

B. Independent Claims 40, 50 and 55 are each patentable under 35 U.S.C. 103(a) over the Examiner's combination

Section 2143 of the Manual of Patent Examining Procedure (MPEP) states:

"To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations."[1]

[1] MPEP 2143 (emphasis added).

Claims 40, 50 and 55 are patentable under 35 U.S.C. 103(a) over the Examiner's combination because the cited references, alone or in combination, do not teach or suggest all of the claim limitations. Each of claims 40, 50 and 55 recite the locking of an identifier. As explained in detail in the preceding section, neither Larsson nor Nakano disclose this feature.

The Examiner appears to mistakenly believe that locking [an identifier of] a data object is the same thing as archiving a data object (i.e., the Examiner has cited an archival data storage process for covering a locking process). This is simply not true. Locking is a technique well known to those skilled in the art. When a software entity is locked, other software entities that may desire to use or have access to the object are prevented from obtaining such access. Therefore, locking is a technique for denying access to a software entity or resource. Archival is another technique that is well known to those of ordinary skill in the art. Data archival typically involves storing data into a storage resource for long term, safe-keeping. Thus "locking" corresponds to preventing access and "archival" is a type of data storage.

As far as the Applicant can tell, Larsson does not teach or suggest the locking of an identifier to a data object. Moreover, as discussed above in the preceding section, Larsson does not appear to disclose confirming that archived data corresponds to the original data. Although Nakano discloses locking a data object, the Applicant does not understand locking an identifier of an object to be an inherent/necessary feature of the locking of the data object. Conceivably an identifier of an object could be used even though access to the object itself locked.

Therefore, the Examiner erred in combining Larsson and Nakano to reject claims 40, 50 and 55.

For the reasons stated above, claims 40, 50 and 55 are patentable under 35 U.S.C. 103(a) over Larsson and Nakano. Appellants respectfully request that the Board reverse the rejections of the claims and direct the Examiner to enter a Notice of Allowance for claims 40, 50 and 55

Respectfully submitted,
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date: 5/13/08

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May 13, 2008
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Carla Vignola
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Date

VIII. APPENDIX A: CLAIMS

1.-39. (Canceled)

40. (Previously presented) A method, comprising:

a) assigning an identifier for a data object and storing said identifier, said data object stored in a database;

b) providing said identifier in response to a request requesting one or more identifiers of one or more data objects to be deleted, locking said identifier, and confirming that content of an archived version of said data object corresponds to said data object's content; and,

c) deleting said data object from said database and deleting said identifier.

41. (Previously presented) The method of claim 40 further comprising marking said data object as available for deletion after said version of said data object has been archived.

42. (Previously presented) The method of claim 40 wherein said storing of said identifier further comprises storing said identifier into a relational database.

43. (Previously presented) The method of claim 40 further comprising determining if a computing system that uses information stored in said database is currently sufficiently under-utilized to permit performing a), b) and c).

44. (Previously presented) The method of claim 40 further comprising repeatedly performing the following:

issuing a request to a software module that performs said storing and said locking, said request requesting one or more identifiers of data objects marked for deletion and deleting a corresponding one or more data objects identified by said one or more identifiers.

45. (Previously presented) The method of claim 44 wherein the number of said one or more identifiers is limited to a value specified by an administrator.

46. (Previously presented) The method of claim 44 wherein said one or more data objects are within the same logical partition of said database.

47. (Previously presented) The method of claim 40 further comprising:

ai) assigning and storing a second identifier for a second data object, said second data object stored in a database;

bi) locking said identifier and confirming that content of an archived version of said second data object corresponds to said second data object's content; and,

ci) deleting said second data object from said database.

wherein bi) is performed in parallel with c).

48. (Previously presented) The method of claim 40 further comprising limiting the number of parallel deleting operations to a value specified by an administrator.

49. (Previously presented) The method of claim 40 wherein said data object is formatted according to an XML format.

50. (Previously presented) An article of manufacture, comprising:

program code stored on a machine readable medium, said program code able to be processed by a machine, said program code being organized into:

a first module comprising first program code that when processed by said machine performs a first method, comprising:

assigning an identifier for a data object and storing said identifier, said data object stored in a database;

providing said identifier in response to a request made by a second module requesting one or more identifiers of one or more data objects to be deleted, locking said identifier;

a second module comprising second program code that when processed by said machine performs a second method, comprising:

confirming that content of an archived version of said data object corresponds to said data object's content;

deleting said data object.

wherein said first method also includes deleting said identifier after said confirming.

51. (Previously presented) The article of manufacture of claim 50 wherein said first method further comprises:

receiving a request from said second software module, said request requesting the identity of data objects marked for deletion;

responding to said request by providing to said second software module one or more identifiers identifying a corresponding one or more data objects marked for deletion.

52. (Previously presented) The article of manufacture of claim 51 wherein said first method further comprises limiting the number of said one or more identifiers to a value specified by an administrator.

53. (Previously presented) The article of manufacture of claim 52 wherein said first method is written to permit said first module to comprehend that said one or more data objects are within the same logical partition of said database.

54. (Previously presented) The article of manufacture of claim 52 wherein said second method further comprises repeatedly issuing requests for the identity of data objects marked for deletion.

55. (Previously presented) An article of manufacture, comprising:

program code stored on a machine readable medium, said program code to implement a method when processed by a machine, said method comprising:

a) assigning an identifier for a data object and storing said identifier, said data object stored in a database;

b) providing said identifier in response to a request requesting one or more identifiers of one or more data objects to be deleted, locking said identifier, and confirming that content of an archived version of said data object corresponds to said data object's content; and,

c) deleting said data object from said database and deleting said identifier.

56. (Previously presented) The method of claim 55 further comprising marking said data object as available for deletion after said version of said data object has been archived.

57. (Previously presented) The method of claim 55 wherein said storing of said identifier further comprises storing said identifier into a relational database.

58. (Previously presented) The method of claim 55 further comprising determining if a computing system that uses information stored in said database is currently sufficiently under-utilized to permit performing a), b) and c).

59. (Previously presented) The method of claim 55 further comprising repeatedly performing the following:

issuing a request to a software module that performs said storing and said locking, said request requesting one or more identifiers of data objects marked for deletion and deleting a corresponding one or more data objects identified by said one or more identifiers.

60. (Previously presented) The method of claim 59 wherein the number of said one or more identifiers is limited to a value specified by an administrator.

61. (Previously presented) The method of claim 59 wherein said one or more data objects are within the same logical partition of said database.

62. (Previously presented) The method of claim 55 further comprising:

ai) assigning and storing a second identifier for a second data object, said second data object stored in a database;

bi) locking said identifier and confirming that content of an archived version of said second data object corresponds to said second data object's content; and,

ci) deleting said second data object from said database.

wherein bi) is performed in parallel with c).

63. (Previously presented) The method of claim 55 further comprising limiting the number of parallel deleting operations to a value specified by an administrator.

64. (Previously presented) The method of claim 55 wherein said data object is formatted according to an XML format.